

RINGKASAN

Salah satu kerugian yang sering terjadi dalam budidaya tanaman padi adalah serangan hama wereng coklat yang menyerang tanaman padi pada semua fase pertumbuhan, mulai dari pembibitan sampai menjelang panen. Pestisida sintetik berbahan aktif buprofezin mampu memberikan peranan dalam penanggulangan masalah tersebut. Namun, apabila penggunaan pestisida sintetik tersebut diberikan secara terus menerus dan berlebihan dapat mengakibatkan pencemaran lingkungan serta kerusakan ekosistem. Bakteri tanah dapat dimanfaatkan sebagai mikroorganisme yang mampu beradaptasi terhadap lingkungan tercemar sehingga perlu diidentifikasi melalui sifat-sifat morfologi dan fisiologisnya. Penelitian ini bertujuan untuk mengetahui karakteristik isolat bakteri rizosfer padi toleran pestisida sintetik berbahan aktif buprofezin secara morfologi dan biokimia.

Penelitian dilaksanakan dari bulan November 2018 hingga Februari 2019 di Laboratorium Perlindungan Tanaman dan Laboratorium Agroekologi Fakultas Pertanian, Universitas Jenderal Soedirman. Isolat bakteri yang digunakan dalam penelitian ini berasal dari desa Srowot (SR-1), Pageralang (PA-1) dan Gunung Tugel (GT-2). Tahapan yang dilakukan dalam penelitian ini adalah persiapan laboratorium, sterilisasi alat dan bahan, peremajaan isolat bakteri, karakterisasi morfologi, dan karakterisasi biokimia. Variabel yang diamati pada ketiga isolat bakteri tersebut, meliputi karakterisasi morfologi (kelompok positif/negatif dengan pewarnaan gram dan pewarnaan spora) dan karakterisasi biokimia (respon positif/negatif dengan uji katalase, fermentasi karbohidrat, hidrolisis urea, *methyl red*, *voges proskauer*, indol, sitrat, motilitas, hidrolisis pati, produksi H₂S, oksidase, dan oksidasi-fermentasi).

Hasil pengamatan karakterisasi isolat SR-1, PA-1, dan GT-2 secara morfologi maupun biokimia menunjukkan hasil yang bervariasi. Karakter morfologi dari ketiga isolat tersebut memiliki kesamaan, yaitu gram positif, bentuk sel batang, dan memiliki endospora. Karakter biokimia yang menunjukkan respon positif pada SR-1 meliputi uji katalase, fermentasi glukosa dan manitol, *methyl red*, motilitas, hidrolisis pati, dan bersifat aerob/anaerob fakultatif. PA-1 meliputi uji katalase, *methyl red*, sitrat, motilitas, produksi H₂S, oksidase dan bersifat aerob obligat. GT-2 meliputi uji katalase, fermentasi sukrosa, laktosa, dan manitol, *methyl red*, *voges proskauer*, indol, sitrat, motilitas, oksidase, dan bersifat aerob/anaerob fakultatif. Genus tiga isolat bakteri tersebut berdasarkan *Bergeys's Manual of Determinative Bacteriology 9th* adalah *Bacillus* sp.

SUMARRY

One of damage that frequently occur in cultivation of rice crops is attack of brown plant hopper that attack rice plant in whole growth phase, since from seeding until before the harvest synthetic pesticide with buprofezin active compound is able to overcome that problem. However, frequent and excessive used of it's synthetic pesticide can cause environmental pollution and ecosystem damage. Soil bacteria can be used as microorganism that able to adapt with polluted environment thos identification process through morphology and physiology character is needed. This study aims to know morphology and biochemistry character of bacteria isolate on rizhosfer that tolerance to synthetic pesticide with buprofezin active compound.

This study hold from November 2018 until Februari 2019 at Palant Protection laboratory and Agroecology laboratoty of Agriculture Faculty, Jenderal Soedirman University. Bacteria isolate that used in this study were obtamed from Srowot (SR-1) village, Pageralang (PA-1), and Gunung Tugel (GT-2). The methological steps of the study were laboratory preparation, sterilitation of material and tool, rejuveration of bacteria isolate, morphology and biochemistry characteritation. Variables observed on those 3 (three) bacteria isolates were shape morphological character (positive/negative group on gram and spore staining) and biochemistry characterization (positive/negative respond on catalase test, carbohydrate fermentation, urea hydrolysis, methyl red, voges proskauer, indole, cytrat, motility, starch hydrolysis, H₂S production, oxidase, and oxidation-fermentation).

The result of SR-1, PA-1, and GT-2 bacteria isolates characterization observed morphological and biochemistrically showed variaes result. Morphology character of the isolates found equation on it's positive gram, bar shape, and posses endospore. While biochemistry character from those isolates that showed positive respond of SR-1 isolate was catalase, glucose and manitol fermentation, methyl red, and motility, starch hydrolysis, and its aerobic/anaerobic facultative. PA-1 was catalase, methyl red, citrate, motility, H₂S production, oxidase, and its aerobic obligat. GT-2 was catalase, sucrose, lactose, and manitol fermentation, methyl red, voges proskauer, indole, motility, oxidase, and its aerobic/anaerobic facultative. Genus of three bacteria isolates bassed on Bergeys's Manual of Determinative Bacteriology 9th is Bacillus sp.